Patenting software in the European Union.

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The motivation for writing this commentary, comes from the general misconception, that computer programs (also known as software) are not protected in the European Union (EU) and its Member countries, by the Law of Patents. Such mistaken belief, is based on the ground, that Article 52 (2) of the European Patent Convention (EPC), excludes computer programs "as such", to be a patentable subject matter.

1.   The information era.

Nowadays, a new revolutionary age is in course. The world is shrinking, and humanity are experiencing globalized changes, in similar ways, like the ones that in the XV century where caused by the printing press developed by Gutenberg, or in the XIX century by the industrial machinery.

If it was the atom who named the XIX century, the contemporary will be known as the information era, in recognition to the information systems and the programs used to operate them.

Now as then, technology has released humans from rutinary jobs and physical efforts, providing them with enough time and strength, to dedicate their energy into creating tasks. [2]   In order to protect the creations of the human mind, intellectual property

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[2] GALÁN CORONA, Eduardo; "El futuro de las patentes en España y en Europa/La protección jurídica del soporte lógico (software)"; Licensing Executive Society, Spain, 1983. P. 3. Thereafter,

developed two main legal figures, which for the purpose of our study, are summarized in copyrights and patents.

Whilst copyright protection undoubtedly protects computer programs, as works of the spirit, it cannot -unlike patents- protect novel inventions -either product or process- regardless of the form in which the concepts are expressed. Alternatively, patents protect novel inventions, and the ideas behind them, in order to acquaint the effort, work, study, industry, investment and genius of the inventor. The patent system, seeks to reward the practical industrial result attained trough research and creativity by the inventor, by granting a temporal monopoly exploitation right; at the time that the universal technological knowledge expands.[3]

It is not the intention of this expressions to support one system as superior to the other - especially when they regulate different subject matters- but to affirm that new software inventors are entitled to accumulate and benefit from both legal figures.

2.   The international patent system.

In order to distinguish the management given to software inventions, by the different patent systems of the world, we divide them as follows:

- National patents.

- European Patents (ruled by the EPC and followed by the EU Members).

- PCT patent applications.[4]

3.   National Patents.

Patents granted by each country, have national effects and are independent from each other, therefore, each county will regulate in their national legislation, the different subject matters for patent protection and exclusions thereof. Nevertheless, each country must follow the general basic principles, minimum protection standards and priority rights established in the Paris Convention, [5] and the rest of the International Agreements they are part of.

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invention and creativity is the pathway of human development, which must be encouraged and protected.

[3] O´CALLAGHAN MUÑOZ, Xavier y Otros; "Propiedad Industrial Teoría y práctica"; Madrid, Editorial Centro de Estudios Ramón Areces, S.A., 2001, P. 5

[4] All herebefore must accomplish with the Paris Convention and TRIPS.

[5] When they are Members of the Union, or have signed any of the further international agreements, which also compels them to fulfill it.

Thus, patentability of software will depend on each county's (or region) legislation tendency, which can be divided in:

-Permissive: -followed by the U.S.A.- where software is protected by patent law, as any other invention, when the objective requisites for patent protection are fulfilled; and

-Limitative: -followed by the Members of the EPC- where software implemented inventions are protected as any other patentable subject matter, but where computer programs "as such", are excluded.

4. The U.S.A.

As mentioned before, the U.S.A. legislation, has a permissive tendency pro-patent. Its common law tradition, has developed a series of decisions that interpret the meaning of the legislation.

The U.S.A. Patent act.

In the U.S.A. the Patent act (35 U.S.C. § 101) sets forth the general requirements for a utility patent. Unlike the EPC, the U.S. Patent Act does not comprise a list of excluded subject matter, nor sets a statutory requirement of a technical character, leaving its interpretation to the corresponding Courts. The Patent act states:

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvements thereof, may obtain a patent, subject to the conditions and requirements of this title" (35 U.S.C. §101)[6]

The U.S.A. Case law.

In the 1980`s, the American government reconsidered the role of Intellectual Property in the world, especially since the U.S.A. continued loosing strength in the international markets.[7] The Judicial power responded with a series of decisions, demonstrating that the tendency had changed in a pro-patent direction, concerning software patents.[8]

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[6] Section 102 sets out the novelty requirement, whereas Section 103 clarifies that patents are granted only for non-obvious subject matter.

[7] STOBS, Gregory A.; "Software Patents"; 2a. Ed., U.S.A., Aspen Law and Business, 2000. P.44.

[8] Oxford Companion to the U.S.A. Supreme Court ,Kermit L Hall; Ed 1992. Also see STOBS, Op. Cit. P44.

Diamond v. Chakrabarty, 447 U.S. 303 (1980)

The decision held in <u>Chakrabarty</u> is of great importance in our study, since its interpretation confirmed, that any invention made by man, could be subject matter for patent protection. Thus, <u>Chakrabarty</u> established the pro patent tendency, to be followed by further court decisions.

In this case, the United States Supreme Court of Justice, decided that genetically modified micro-organisms can be patented. In order to base its decision, Justice Burger turned to the works of Thomas Jefferson and to the Patent Act of 1973, all of which defined the statutory subject matter as: "…any new and useful art, machine, manufacture, or any new or useful improvement thereof". [9] Also, the Committee report, informed that Congress intended statutory subject matter to include anything under the sun that is made by man.[10] Thus, after review of the case, the Supreme Court resolved, that human made, genetically engineered life forms were patentable. [11]

Diamond v. Diehr, 450 U.S. 175, 186 (1981).

The applicability of <u>Chakrabarty</u> to the patentability of computer software, was made clear in the case <u>Diamond v. Diehr.</u> In <u>Diehr</u>, the Supreme Court, decided that patents could indeed be granted for computer programs.

The rationale behind this case, was that Congress intended statutory subject matter to include "anything under the sun that is made by man" confirmed in <u>Chakrabarty</u>.[12] Under this rationale, computer software could also be patentable subject matter.

In <u>Diehr</u>, a process for molding raw, uncured, synthetic rubber into cured precision products, was claimed. The invention involved a computer and its software, to calculate and control trough an equation, the time needed in order to determine when the rubber was cured and automatically open the mold. The Supreme Court, concurred with the Court of Customs and Patent Appeals decision, that "a claim drawn to subject matter otherwise statutory, does not become non statutory because a computer is involved".[13]

Thus, since the invention claimed in <u>Diehr</u>, was not merely a mathematical equation in isolation, but a process for curing rubber which incorporates in it, a more efficient solution to the equation; that process is not barred at the threshold by Sec. 101. [14]

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[9] Section 1,1 Stat. 319 (1973).

[10] S. 1979, 82 d. Cong., 2d Sess. (1952; HR. 1923, 82 d Cong., 2d Sess. (1952)

[11] STOBS, Op. Cit. P. 45.

[12] S. 1979, 82 d Cong., 2d Sess. (1952; HR. 1923, 82 d Cong., 2d Sess (1952).

[13] In re <u>Diehr</u>, 602, F2d, 982. CCPA 1979.

[14] <u>Diamond v. Diehr</u>, 450 US 175 (1981).

In re Alappat, 33 F.3d 1526 (Fed. Cir. 1994)

During the procedure In re Alappat, the U.S. Court of Appeals for the Federal Circuit, recognized -accordingly to Chakrabarty- three categories of non patentable subject matter: "laws of nature, natural phenomena and abstract ideas";[15] at the time that held that the Supreme Court never intended to create a fourth category of objects excluded from patentability.

Alappat's claims were drawn to a so-called "rasterizer", which is used in a digital oscilloscope to smooth waveform data prior to displaying the waveform on the oscilloscope screen. The invention lied in the general architecture and operation of the rasterizer, to substantially eliminate the appearance of discontinuities in the waveform by changing the intensity of each pixel depending on the pixel's proximity to a waveform vector.

The Court of Appeals confirmed, that any invention can be patented, as long as its claims fulfill the requisites established by §101 of the Patent Act, even when the invention contains mathematical algorithms, or when such algorithm is implemented in a process that patent law protects. The Federal Court added, that inventions that work through digital electronics should not be excluded from patentability, merely by the fact that its mechanism of operation can be represented trough mathematical formulas.

State Street Bank and Trust Co. v. Signature Financial Group Inc. 149 F. 3d 1368, 1375 (Fed. Circ. 1998).

State Street Bank & Trust case involved a patent for a computer based system, for pooling mutual funds into a common investment fund. Signature Financial Group Inc. patented a method for running mutual funds, where several mutual funds (spokes) pool their investment assets into a single investment portfolio (hub), then a computer program implemented complicated algorithms and equations for the assignment of assets and expenses to the individual contributor. Then, the software determines the value of each fund based upon a percentage ownership of each of the assets in the hub portfolio.

In this case, the Court of Appeals for the Federal Circuit emphasized that the Freeman-Walter-Abele test no longer applied, but instead, the decisive criterion to consider in order to patent an computer based invention was, whether a "useful, concrete and tangible" result is produced.

5.   Trade Related Aspects of Intellectual Property Rights (TRIPS).

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[15] STOBBS, Op. cit., P. 44.

Taking into consideration the need to promote effective and adequate protection of IP rights around the world, and in order to ensure measures and procedures to enforce them, TRIPS regulates in a single instrument, the basic principles and general provisions, of the world IP.

The principles and provisions established by TRIPS, must be followed by each and every Member, at the time that they comply with the Paris Convention, the Berne Convention, the Rome Convention and the Treaty on Intellectual Property in Respect of Integrated Circuits. [16]

Accordingly to TRIPS, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application, without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced.[17]

TRIPS does not have a list of exclusions, nor excludes from patentability any subject matter. Nevertheless, the agreement empowers its Members, to exclude from patentability, inventions necessary to protect *ordre* public or morality, including to protect human, animal or plant life or health, or to avoid serious prejudice to the environment.   Members of TRIPS, may also exclude from patentability:

   (a)   diagnostic, therapeutic and surgical methods for the treatment of humans or animals;   (b) plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the World Trade Organization Agreement. [18]

Thereafter, TRIPS does not exclude software from patentability, nor permits its exclusion by its Members.

6.   Patent Cooperation Treaty (PCT).

The PCT is an international agreement devoted to process in a single international application, multiple national patents. The reasoning behind the PCT, was to eliminate

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[16] GIBBY, John; "Software patent developments. A programmer's perspective"; Journal, Intellectual Property Law Review, West Group., U.S.A., 1999, P. 151.
[17] Article 27 of TRIPS.

[18] Article 27.3 of TRIPS.

the problems generated by multiple individual patent applications, which must be filed in each country in their national languages and requirements. [19]

This agreement, does not discuss the patentability of any subject matter, nor excludes any invention from patentability. It is merely limited regulate the international application process, during which, an examination of the state of the art is taken place, and an International Search Report is produced. Thus, no international application has been or will be revoked merely on the ground that the claimed invention is a computer software under the PCT.

Nonetheless, the PCT Regulations, allow the International Searching Authority to excuse itself from making the prior art search of an international patent application, if, and to the extent to which, its subject matter is a computer program, and the International Searching Authority is not equipped to search the prior art concerning such programs. [20]

Thereafter, the patentability of software is not questioned by the PCT. The exoneration to search the state of the art, given to the International Searching Authority extends only to the case of lacking technical instruments. Otherwise the obligation of searching the state of the art, persists. [21]

7. European Patent Convention (EPC).

This part constitutes the central part or our study. As stated before, software is currently protected by copyright law, in the territories ruled by the Berne Convention (including the U.S.A. and the EU countries). [22]

Since IP rights are independent and cumulative, protecting software by copyright law, does not exclude it to be protected by the rest of the IP rights. Whilst copyright law guards the aesthetic aspect of the original work, patents protect the industrial features of the technical invention. While copyright creates a monopoly and temporary right regarding the expression of the work, patens create a monopoly temporary right regarding the idea behind the invention.

Any how, although affirming software's cumulative protection -by copyright and patent law- in countries like the U.S.A. is an uncomplicated task, in the case of EU Members will be a complicated task.

8. Chronological facts of software protection.

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[19] Ian Muir, Op. Cit. P 2.
[20] Article 39 and 67 of the Regulations under the PCT.
[21] Article 31 of PCT.
[22] Berne Convention for the Protection of Literary and Artistic Works of September 9, 1886, completed at PARIS on May 4, 1896, revised at BERLIN on November 13, 1908, completed at BERNE on March 20, 1914, revised at ROME on June 2, 1928, at BRUSSELS on June 26, 1948, at STOCKHOLM on July 14, 1967, and at PARIS on July 24, 1971, and amended on September 28, 1979.

Since the first moments, the world searched for the ideal method of protecting software by IP laws. Many discussions where made in order to consider copyright, patents, or even *sui generis* figure between them. Nevertheless, most countries protected computer programs by copyright law only, given the fact that it offered the easiest solutions, given the facts that most countries where Members of the Berne Convention, copyright offered software immediate protection since it was considered a literary work, and previous registration was not requested in order to gain rights. [23]

Protecting software by copyrights, was not an insensate decision, especially considering the possibility of accumulating other intellectual property rights. But, instead of accumulating IP rights to software owners, the world tended for some years to exclude software protection by other figures like patents. It took years of legal debate to change the tendency, which then divided between countries that protected software by copyright and patent law (such as the U.S.A.), and countries (and Regional Communities such as the EU) that tried to exclude the last.

9.   Patenting software according to the EPC.

As stated before, it took almost a decade in the EU, over two periods, to discuss and draft a definition of the patentable subject matter and the exclusions to of the EPC. [24] Until latest discussions before executing the EPC, the computer programs where taken into consideration as subject matter excluded from patentability.   Observations held before, considered that the state of development of those times, did not allow drafters to determine whether or not, computer programs should be considered as subject matter for a patent, so a clear answer to the subject had a long run to go. [25]

While redacting the CPE, the PCT had an enormous influence, given the fact that some PCT drafters instructed the preparation of the CPE. A special consideration was brought to mind while drafting the CPE: "The Regulations of the PCT" which, provide respectively, in its Articles 39 and 67 that, the International Searching Authority, and the International Preliminary Examining Authority, will not be required to search or examine an international application, where its subject matter is a computer program, to the extent, that the International Searching Authority or the International Preliminary Examining Authority, are not equipped to search the prior art concerning such programs, or carry out an international preliminary examination concerning such programs.

Despite the fact that the PCT never excluded computer programs from patentability, but merely released in certain cases the International Authority of searching the prior state of the art, it had a considerable influence when the exclusions of the EPC where formulated.

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[23] A similar situation of exclusion experienced the pharmaceutical products. On the contrary, software presented some differences with the rest of the works of art, such as a technical character, finding in software real art, the impossibility of the citing, its technical commercial character, etc.
[24] BERESFORD, Keith; "Patenting Software under the European Patent Convention"; London, Sweet and Maxwell, 2000, P.12.
[25] BERESFORD, Op. Cit. P.16.

As a consequence, the final draft EPC excluded computer programs as patentable subject matter, based on the fact that they did not produced a technical character.[26]

Any how, it was clear that patentable inventions would not be excluded form patentability, merely because they utilized or involved a computer program.[27]

10.   Article 52 (2) EPC.

Article 52 (2) contains a list of the items, which are to be considered non-patentable, according to the EPC, amongst which are computer programs "as such".[28]

Only computer programs as such, are banned from patentability. Therefore, computer software can be patentable -according to the EPC [29]- when it becomes part of an invention or when it influences the manner of working of a device or controls it. [30]

To interpret the Article and the amount of doubts regarding the real technical character of software, the Board of Appeals acknowledged that " ...all computer programs have a basic technical character, in the sense that they bring about technical changes within the computer; but this basic technical character, *per se*, should not be enough to give rights to patentability of a computer program having some novel aspect" Thereafter, "...a further technical effect beyond the mere fact that the software inevitably controls electrical processes and electrical circuitry within a physical apparatus or computer." [31]

They Board of Appeals, pointed out that it is necessary to look elsewhere for the technical character which would give site to patentability; and said "... it could be found in the further effects deriving form the execution by the hardware of the instructions given by the computer program, were said further effects have a technical character or where they cause the software to solve a technical problem, an invention which brings

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[26] Although the real reason was that Europe could not compete with American software providers, nor had the capacity to search prior art.

[27] BERESFORD, Op. Cit. P. 20.

[28]   "Article 52:   European patents shall be granted for inventions [in all fields of technology], as far as they are new, involve an inventive step and are susceptible of industrial application."

   "The following in particular shall not be regarded as inventions within the meaning of paragraph 1:3…programs for computers;"

   "The provisions of paragraph 2 shall exclude patentability of the subject-matter or activities referred to in that provision only to the extent to which a European patent application or European patent relates to such subject-matter or activities **as such**."

[29] And applicable in the rest of the EU territories.

[30] Guidelines Civ. 2.3.

[31] STOBBS, Gregory A.; Op. cit., P. 35.

out such an effect may be considered and invention, which can in principle, be the subject matter of a patent".

Consequently a European Patent may be granted when a piece of software manages, by means of a computer, an industrial process, or the working of a piece of machinery; and also in every case where a program for a computer is the only means, or of the necessary means, of obtaining a technical effect within the meaning specified above, where for instance, a technical effect of that kind is achieved by the internal function of a computer itself under the influence of said program. [32]

As a result of the foregoing, European Patents for software implemented inventions have been granted along the way, especially when the claims are directed to the computer when programmed, or to the process which takes place in the computer when the program is loaded.

11.   Latest discussions regarding patentability of software in the EU.

After the publication of the Green Book on Community Patents, the patent system in the European Union has avoided a deeper debate regarding the patentability of computer programs *per se*, and their unjustified exclusion from the EPC.   Nonetheless, the European Commission initiated a proposal for a directive in order to harmonize and abolish the legal uncertainty produced by the diverse case law resolutions held by its Members, regarding the patentability of computer implemented inventions. Opponents of the original draft, claimed that it was a finely attempt to make all software patentable, since software could implement other software as well. On the contrary, supporters, argued that this was not the case since there should be no extension to the existing scope of patentability for computer programs. Only computer programs which provided a "technical contribution" would be patentable.

On 6 July 2005, the European Parliament rejected the proposal for a new directive, without considering any of the other proposed amendments, and reserved the subject for a new discussion in the future.   Consequently, in the EU computer software as such, is not patentable, unless it implements another invention or produces further technical effects.

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[32] Beresford, Op. Cit. P. 38. Also see resolutions of the Board of Appeals, not bound by the Guidelines, resolved in Decision T 97/0935 and T97/1173, that Article 52.2 of the EPC, only excludes computer programs from protection, when there is no technical contribution to the state of the art. This criteria was implemented since the Guidelines for Examination of 1985 and reaffirmed in 1999, pointing out that "… if an invention makes a technical contribution to the known art, patentability should not be denied merely because it is implemented by a computer program".   In the case of a software implemented invention, which makes a technical contribution to the known art, it may be claimed when loaded into a computer".

At present time, more than 20, 000 European Patens for software related inventions, have been granted by the European Patent Office.[33] So, if we consider software as the developing tool for the future, where will software owners and producers seek IP protection for their business in the near future? ©

http://legal.european-patent-office.org/dg3/biblio/t030928eu1.htm

todas las decisions DE LA CORTE en esta pagina.

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[33] BERESFORD, Op. Cit. PREFACE. Also see 1994 Annual Report of the EPO.